REMARKS

Claims 1 to 21 as set forth in Appendix I of this paper are now pending in this case. Claims 19 to 21 have been added as indicated in the listing of the claims.

Applicants have added new Claims 19 to 21 to further bring out some of the embodiments of the compounds of formula (I) defined in Claim 1. Support for the respective embodiments is, inter alia, found in Claims 1 and 4, and on page 5, indicated lines 18 to 23, of the application. No new matter has been added.

The Examiner rejected Claims 1 to 5, 10 to 14 and 18 under 35 U.S.C. §103(a) as being unpatentable in light of the teaching of ***Seitz et al.*** **(WO 96/17825)**, taking the position that the reference suggests a compound of formula I where

Ar^2 is a phenyl that is substituted with 2 alkoxy groups;

A^1, A^2 and A^3 are hydrogen,

m is 2,

E is $=CHR^1$ where position 1 on the moiety carries a heteroaryl (Ar^1)-G-Z, and R^1 on the 2 position carries alkyl (methyl, ethyl, propyl),

G is a bond, and

Z is halogen, alkyl (methyl, ethyl, propyl) or alkoxy (methoxy, ethoxy or propyloxy).[2)]

It is, however, respectfully urged that the generic disclosure which is provided by the teaching of ***Seitz et al.*** and from which the Examiner selected the foregoing denotations in order to construe the particularities of applicants compounds (I) cannot be deemed to provide any information which would have guided a person of ordinary skill in the art who was unaware of applicants' invention to make the specific selection which was made by the Examiner.

When applying 35 U.S.C. §103, it is inter alia necessary that the references be considered as a whole, that the references suggest the desirability and thus the obviousness of making the claimed combination, and that the references be viewed without the benefit of impermissible hindsight vision afforded by the claimed invention,[3)] ie., in

2) Office action page 2, lines 18 to 23.

3) *Hodosh v. Block Drug Co., Inc.*, 786 F.2d 1136, 1143 n.5, 229 USPQ 182, 187 n.5 (Fed. Cir. 1986).

determining obviousness the decisionmaker has to return to the time at which the invention was made.[4]

The patentability of a claim to a specific compound or subgenus embraced by a prior art genus should be analyzed no differently than any other claim for purposes of 35 U.S.C. §103. "The section 103 requirement of unobviousness is no different in chemical cases than with respect to other categories of patentable inventions."[5] A determination of patentability under 35 U.S.C. §103 should be made upon the facts of the particular case in view of the totality of the circumstances.[6] Use of per se rules is improper for determining whether claimed subject matter would have been obvious under 35 U.S.C. §103.[7] "The fact that a claimed compound may be encompassed by a disclosed generic formula does not by itself render that compound obvious,"[8] and the Federal Circuit has "decline[d] to extract from Merck[& Co. v. Biocraft Laboratories Inc., 874 F.2d 804, 10 USPQ2d 1843 (Fed. Cir. 1989)] the rule that ... regardless of how broad, a disclosure of a chemical genus renders obvious any species that happens to fall within it."[9]

There is no absolute correlation between the size of the prior art genus and a conclusion of obviousness,[10] and not even the fact that a prior art genus contains *a small number* of members creates a per se rule of obviousness. To establish a prima facie case of obviousness, the prior art must teach some motivation to select the claimed species or subgenus.[11]

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4) E.g. *Uniroyal, Inc. v. Rudkin-Wiley Corp.*, 837 F.2d 1044, 5 USPQ2d 1434 (Fed. Cir. 1988), cert. denied, 488 U.S. 825 (1988); *Gilette Co. v. S.C. Johnson & Son, Inc.*, 919 F.2d 720, 16 USPQ2d 1923 (Fed. Cir. 1990).

5) *In re Papesch*, 315 F.2d 381, 385, 137 USPQ 43, 47 (CCPA 1963).

6) See, e.g., *In re Dillon*, 919 F.2d 688, 692-93, 16 USPQ2d 1897, 1901 (Fed. Cir. 1990) (in banc).

7) See, e.g., *In re Brouwer*, 77 F.3d 422, 425, 37 USPQ2d 1663, 1666 (Fed. Cir. 1996); *In re Ochiai*, 71 F.3d 1565, 1572, 37 USPQ2d 1127, 1133 (Fed. Cir. 1995); *In re Baird*, 16 F.3d 380, 382, 29 USPQ2d 1550, 1552 (Fed. Cir. 1994).

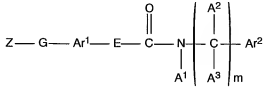
8) *In re Baird*, 16 F.3d 380, 382, 29 USPQ2d 1550, 1552 (Fed. Cir. 1994).

9) *In re Jones*, 958 F.2d 347, 350, 21 USPQ2d 1941, 1943 (Fed. Cir. 1992); see also *In re Deuel*, 51 F.3d 1552, 1559, 34 USPQ2d 1210, 1215 (Fed. Cir. 1995).

10) See, e.g., *In re Baird*, 16 F.3d at 383, 29 USPQ2d at 1552.

11) See, e.g., *In re Deuel*, 51 F.3d at 1558-59, 34 USPQ2d at 1215 ("No particular one of these DNAs can be obvious unless there is something in the prior art to lead to the particular DNA and indicate that it should be prepared."); *In re Baird*, 16 F.3d at 382-83, 29 USPQ2d at 1552; *In re Bell*, 991 F.2d 781, 784, 26 USPQ2d 1529, 1531 (Fed. Cir. 1993) ("Absent anything in the cited prior art suggesting which of the 1036 possible sequences suggested by Rinderknecht corresponds to the IGF gene, the PTO has not met its burden of establishing that the prior art would have suggested the claimed sequences.").

The generic formula which is disclosed by ***Seitz et al.*** not only embraces a broad range of compounds but also allows for considerable structural diversity of the compounds. According to page 1, indicated line 8, to page 3, indicated line 24, of the reference pertains to carboxylic acid amides of formula (1)



(1)

in which

A^1 is hydrogen or alkyl;

A^2 is hydrogen or alkyl;

A^3 is hydrogen, alkyl or cyano;

Ar^1 is optionally substituted arylene or heteroarylene;

Ar^2 is optionally substituted aryl or heteroaryl;

E is an 1-alkene-1,1-diyl group which carries in the 2-position a radical R^1, or
is a 2-aza-1-alkene-1,1-diyl group which carries in the 2-position a radical R^2, or
is an optionally substituted imino group ("azamethylene", N-R^3), or
is a 3-aza-1-propene-2,3-diyl group which carries in the 1-position a radical R^4 and in the 3-position a radical R^5, or
a 3-aza-1-propene-2,3-diyl group which carries in the 1-position a radical R^4, or
a 3-thia-1-propene-2,3-diyl group which carries in the 1-Position a radical R^4, or
a 1-aza-1-propene-2,3-diyl group which carries in the 1-position a radical R^6 and in the 3-position a radical R^5, or
a 1-aza-1-propene-2,3-diyl group which carries in the 1-position a radical R^4 and in the 3-position a radical R^5, or
a 1,3-diaza-1-propene-2,3-diyl group which carries in the 1-position a radical R^6 and in the 3-position a radical R^5, or
a 1-aza-3-oxa-1-propene-2,3-diyl group which carries in the 1-position a radical R^6, or
a 1-aza-3-thia-1-propene-2,3-diyl group which carries in the 1-position a radical R^6, wherein

R^1 is hydrogen, halogen, cyano or in each case optionally substituted alkyl, alkoxy, alkylthio, alkylamino or dialkylamino;

R^2 is hydrogen, amino, cyano or in each case optionally substituted alkyl, alkoxy, alkylamino or dialkylamino;

R^3 is hydrogen, cyano or in each case optionally substituted alkyl, alkenyl, alkynyl, cycloalkyl or cycloalkylalkyl;

R^4 is hydrogen, halogen, cyano or in each case optionally substituted alkyl, alkoxy, alkylthio, alkylamino or dialkylamino;

R^5 is alkyl, and

R^6 is hydrogen, amino, cyano or in each case optionally substituted alkyl, alkoxy, alkylamino or dialkylamino;

G is a single bond, oxygen, sulfur, or in each case optionally halogen, hydroxy, alkyl, halogenalkyl or cycloalkyl substituted alkandiyl, alkendiyl, alkyndiyl or is one of the following groups: -Q-CQ-, -CQ-Q-, $-CH_2-Q-$; $-Q-CH_2-$, $-CQ-Q-CH_2-$, $-CH_2-Q-CQ-$, $-Q-CQ-CH_2-$, $-Q-CQ-Q-CH_2-$, -N=N-, $-S(O)_n-$, $-CH_2-S(O)_n-$, -CQ-, $-S(O)_n-CH_2-$, $-C(R^7)=N-O-$, $-C(R^7)=N-O-CH_2-$, $-N(R^8)-$, $-CQ-N(R^8)-$, $-N(R^8)-CQ-$, $-Q-CQ-N(R^8)-$, $-N=C(R^7)-Q-CH_2-$, $-CH_2-O-N=C(R^7)-$, $-N(R^8)-CQ-Q-$, $-CQ-N(R^8)-CQ-Q-$, $-N(R^8)-CQ-Q-CH_2-$, $-Q-c(R^7)=N-O-$ or $-N(R^8-c(R^7)=N-O-CH_2-$, wherein

n is 0, 1 or 2;

Q is oxygen or sulfur;

R^7 is hydrogen, cyano, or in each case optionally substituted alkyl, alkoxy, alkylthio, alkylamino, dialkylamino or cycloalkyl;

R^8 is hydrogen, hydroxy, cyano or in each case optionally substituted alkyl, alkoxy or cycloalkyl;

m is 0, 1 or 2, and

Z is in each case optionally substituted alkyl, alkenyl, alkynyl, cycloalkyl, aryl or heterocyclyl.

Notably, as concerns the definition of Ar^1 which is provided by the reference, the authors distinguish between optional substituents of the arylene or heteroarylene group and the mandatory moiety -G-Z. The optional substituents of Ar^1 which are mentioned in the foregoing generic definition are further specified on page 5, indicated lines 11 to 30, of the reference as follows:

halogen, cyano, nitro, amino, hydroxy, formyl, carboxy, carbamoyl, thiocarbamoyl,
in each case straight chain or branched alkyl, alkoxy, alkylthio, alkylsulfinyl or alkylsulfonyl having from 1 to 6 carbon atoms,
in each case straight chain or branched alkenyl, alkenyloxy or alkynyloxy having from 2 to 6 carbon atoms,
in each case straight chain or branched halogenalkyl, halogenalkoxy, halogenalkylthio, halogenalkylsulfinyl or halogenalkylsulfonyl having from 1 to 6 carbon atoms and from 1 to 13 identical or different halogen atoms,
in each case straight chain or branched halogenalkenyl or halogenalkenyloxy having from 2 to 6 carbon atoms and from 1 to 13 identical or different halogen atoms,
in each case straight chain or branched alkylamino, dialkylamino, alkylcarbonyl, alkylcarbonyloxy, alkoxycarbonyl, alkylsulfonyloxy, hydroximinoalkyl or alkoximinoalkyl having from 1 to 6 carbon atoms in each alkyl moiety,
alkylene or dioxoalkylene, each having 1 to 6 carbon atoms, each being linked twice, and each optionally being mono- or poly-substituted by identical or different halogen and/or straight chain or branched alkyl having from 1 to 4 carbon atoms and/or straight chain or branched halogenalkyl having from 1 to 4 carbon atoms and from 1 to 9 identical or different halogen atoms.

The distinction which is made by ***Seitz et al.*** between optional substituents of Ar^1 and the mandatory moiety -G-Z indicates, and the preferred embodiments which are addressed in the reference confirm, that the moiety -G-Z is intended to add a particular structural feature which is not otherwise provided by the optional substituents. For example, in accordance with the particular embodiments which are specified on page 16, indicated line 15, to page 18, indicated line 30, of the reference

G represents oxygen, sulfur, or optionally fluoro, chloro or bromo substituted dimethylene (ethane-1,2-diyl), ethene-1,2-diyl, or one of the following groups: -CQ-Q-, $-CH_2-Q-$; $-Q-CH_2-$, $-CQ-Q-CH_2-$, $-Q-CQ-Q-CH_2-$, -N=N-, $-S(O)_n-CH_2-$, $-C(R^7)=N-O-$, $-C(R^7)=N-O-CH_2-$, $-N(R^8)-CQ-$, $-Q-CQ-N(R^8)-$, $-N=C(R^7)-Q-CH_2-$, $-CH_2-O-N=C(R^7)-$, $-N(R^8)-CQ-Q-$, $-CQ-N(R^8)-CQ-Q-$, $-N(R^8)-CQ-Q-CH_2-$, $-Q-c(R^7)=N-O-$ or $-N(R^8-c(R^7)=N-O-CH_2-$, and

Z represents phenyl, 1,2,4-thiadiazolyl, 1,3,4-thiadiazolyl,

1,2,4-oxadiazolyl, 1,3,4-oxadiazolyl, pyrimidyl, pyrimidinyl, pyridazinyl, pyrazinyl, 1,2,3-triazinyl, 1,2,4-triazinyl or 1,3,5-triazinyl which optionally carry one to three substituents.

Correspondingly,

- the particular embodiment which is represented by ***Seitz et al.***'s formula (1a)[12] comprises as moiety G a $-CH_2-O-$ bridge and as moiety Z^1 an optionally substituted phenyl radical,
- the particular embodiment which is represented by ***Seitz et al.***'s formula (1b)[13] comprises as moiety G a $-CH_2-O-N=C(CH_3)-$ bridge and as moiety Z^2 an optionally substituted phenyl, pyridyl or pyrimidyl radical, and
- the particular embodiment which is represented by ***Seitz et al.***'s formula (1c)[14] comprises as moiety G an oxygen bridge and as moiety Z^3 an optionally substituted 1,2,4-thiadiazolyl, 1,3,4-thiadiazolyl, 1,2,4-oxadiazolyl, 1,3,4-oxadiazolyl, pyrimidyl or 1,3,5-triazolyl radical.[15]

The representative examples which are described on pages 34 to 39 of the reference equally illustrate that the moieties -G-Z of the compounds taught by ***Seitz et al.*** represent combinations of a bridging segment G, such as $-CH_2-O-$, -O-, and $-O-N=C(CH_3)-$, and an aromatic system Z. Additionally, those representatives differ structurally from applicants' compounds in that Ar^1 is a phenyl ring rather than a heteroaryl group as required in accordance with applicants' invention, and that E is a $C=N-OCH_3$ group rather than a group $C=CR^1R^2$ as required in accordance with applicants' formula (I).

The teaching of ***Seitz et al.***, on the one hand, delineates a large genus of structurally diverse compounds. On the other hand, the reference directs the attention to groups of compounds which are structurally considerably more complex than applicants' compounds of formula (I). As such, the situation here resembles the circumstances which were before the Federal Circuit in the decision in *In re Baird* where a prior art reference disclosed a generic formula encompassing the claimed composition. The Court found that the reference would not have provided the requisite motivation to select the claimed composi-

12) Cf. page 19, indicated line 1, of ***WO 96/17825***.

13) Cf. page 20, indicated line 22, of ***WO 96/17825***.

14) Cf. page 22, indicated line 16, of ***WO 96/17825***.

15) Formulae (1a) to (1c) of the reference further differ from applicants' compounds in the nature of E and/or Ar^1.

tion because the reference (a) disclosed a vast number of possibilities, and (b) gave as "preferred" and "optimum" examples which were different from and more complex than the claimed composition. In fact, the Court noted that the reference appeared to teach away from the selection of the claimed composition by focusing on the more complex examples.

The generic formula of ***Seitz et al.*** encompasses a vast number of structurally diverse compounds, and the preferred and optimum examples which are emphasized in the reference are structurally considerably more complex than the compounds which are represented by applicants' formula (I) and referenced in applicants' claims. The teaching of ***Seitz et al.*** is, accordingly, deemed to teach away from applicants' invention rather than establishing a prima facie case of obviousness. Favorable reconsideration of the Examiner's position and withdrawal of the rejection of Claims 1 to 5, 10 to 14 and 18 under the provisions of Section 103(a) is therefore respectfully solicited.